Case Study

ANAESTHETIC MANAGEMENT OF A PATIENT WITH PREVIOUS LOBECTOMY POSTED FOR EMERGENCY MODIFIED RADICAL MASTOIDECTOMY

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ABSTRACT

Pulmonary disease can be considered as a risk factor for several respiratory complications occurring during the perioperative period. Here we present a case of a middle-aged man who underwent modified radical mastoidectomy 23 y after left-sided lobectomy in order to illustrate the salient anesthetic considerations of this scenario.

Keywords: Lobectomy, Mastoidectomy, Anaesthesia.

INTRODUCTION

Pneumonectomy would be an extreme example of pulmonary compromise induced by a therapeutic surgical procedure [1]. Early and late post-pneumonectomy morbidity can be extremely high ranging up to 40–60% [2]. There are predictable changes both anatomic and physiological associated with post-pneumonectomy state [2]. Careful pre-anaesthetic evaluation and optimization should be done. Intraoperatively positioning, vitals monitoring with adequate fluid balance and analgesia is to be kept in mind. Postoperatively, intensive respiratory therapy and pain management with morphine or alternatively neuraxial analgesia given through epidural catheters can be considered for lobectomy cases [5]. The main objective or goal in this case management was to avoid hypoxemia and hypercarbia as we could not assess the pulmonary functions preoperatively.

CASE REPORT

A 33 y old male patient presented with right sided Chronic suppurative otitis media (CSOM) with right aural polyp with postaural abscess with right sided facial nerve palsy for which he was posted for emergency surgery radical Modified mastoidectomy.

On pre-anaesthetic evaluation patient gave a history of admission to a tuberculosis centre at the age of 10 y at the time of which he underwent surgery (lobectomy), the details of which the patient or his family were unaware of. The patient also gave a history of being an old case of tuberculosis and having completed the antitubercular treatment for the same. On general physical examination, patient was conscious, cooperative, oriented, moderately built and nourished. Chest x-ray Posteroanterior (PA) view showed opacity in the left lower lobe region.

On examination the patient had pulse 88/min, BP 130/90 mmHg and a surgical scar of 8 cm in the left anterior aspect of the chest in the left 5th intercostals space extending from left midclavicular line to left midaxillary line (fig. 1). The patient also had a deviation of left angle of the mouth. Airway examination showed Mallampatti grade 2. No other neurovascular deficit was present. On systemic examination, apical impulse was tapping in nature and auscultation revealed decreased air entry in left inframammary, left infra axillary and left infrascapular areas.

Investigations correlating clinical findings included ECG having features of left ventricular hypertrophy (LVH). 2D ECHO could not be done as the case was posted on an emergency basis. The patient was taken up under general anaesthesia following high risk-informed consent with respect to his history of lobectomy, peroperative hypoxemia, respiratory acidosis, intensive care

admission if required was also explained and documented. The patient was shifted to the operation theatre and an intravenous access was obtained with 18G intravenous (iv) cannula. NIBP, SPO2 probe and ECG monitors were connected. The patient was preoxygenated with 100% oxygen for 3 min with Bains circuit. Premedication with Inj. Glycopyrrolate 0.2 mg and Inj. Fentanyl 100 mcg iv given.

Induction is done with Inj. Thiopentione 250 mg iv. Depolarising muscle relaxation is given with Inj. Scoline 100 mg iv. Patient intubated orally with 8 size endotracheal tube fixed at 22 cm after checking bilateral air entry to be equal. Loading dose of Inj. Vecuronium 5 mg iv given. To confirm the chest X-ray findings & keeping in mind the possible differential diagnosis of post tubercular fibrosis and Carcinoma lung, a check fibreoptic bronchoscopy was done which revealed block in the upper segment of the left lower lobe. Maintenance with Oxygen: Nitrous Oxide (50:50), Isoflurane 0.2-0.4 % and Inj. Vecuronium. At the end of surgery, reversal gave with Inj. Neostigmine 2.5 mg iv and inj. Glycopyrrolate 0.4 mg iv. Hemodynamic parameters & saturation were monitored and maintained within normal limits. Patient extubated after thorough endotracheal tube and oral suctioning. The patient was stable intraoperatively and postoperatively and shifted out where the patient was further monitored prior shifting to surgical intensive care unit.

Fig. 1: Showing scar on left side of chest

DISCUSSION

The occurrence of lung injury following lung resection, in particular after pneumonectomy is an expected complication postoperatively. Postpneumonectomy pulmonary oedema (PPE) is a major

complication & indicates the acute onset of hypoxemia and respiratory insufficiency [3].

Radiologically shows features of non-cardiogenic pulmonary oedema. Anaesthetist should be careful not to end up with endobronchial intubation to the same side as pneumonectomy or lobectomy which can lead to hypoxia. Following pneumonectomy, there will be a decrease in the respiratory reserve. Pulmonary function tests show a mixed restrictive and obstructive pattern with a decrease in lung compliance and an increase in airway resistance. FVC and FEV1 are also decreased to a greater extent than exercise capacity. There is minimal change in subjective sensation of breathlessness as measured by Borg scores. Post-procedural PaO2 and PaCO2 depend on the preoperative health of the remaining lung [4]. Post-pneumonectomy ALI can have early or late onset. Earlyons *et al.* I present from 0-3 d where as late ons*et al.* I present between 3-10 days. One lung ventilation using the conventional double lumen endobronchial tube may improve the surgical exposure and reduce damage to the operative lungs in lobectomy cases [6].

In our patient though it was an emergency, the patient had a good reserve following the surgery/lobectomy, so did not desaturate and the procedure was uneventful.3 min preoxygenation was enough and intraoperative fibreoptic check scopy confirmed that there was obstruction beyond the lower lobe as confirmed by X-ray.

CONCLUSION

During the anaesthetic management of post lobectomy patients, factors to be kept in mind are avoiding high **i**ntraoperative ventilation pressures, excessive IV volume replacement, and pre-operative evaluation of pulmonary functions. All efforts should be made to protect the remaining lung from any insult.

CONFLICT OF INTERESTS

Declared none

REFERENCES

1. Veen E J, Janssen-Heijnen MLG, Ritchie ED, Biesma B, van den Bogart MPH, Bolhuis RJ. "Pneumonectomy for bronchogenic carcinoma: analysis of factors predicting short-and long-term outcome". Interactive CardioVascular Thoracic Surgery 2009;9:260-4.
2. Kopec SE, Irwin RS, Umali-Torres CB, Balikian JP, Conlan AA. The post-pneumonectomy state. Chest 1998;114:1158–84.
3. Ruffini E, Parola A, Papalia E, Filosso PL, Mancuso M, Oliaro A, *et al.* Frequency and mortality of ARDS and acute respiratory distress syndrome after pulmonary resection for bronchogenic carcinoma. Eur J Cardio-Thoracic Surgery 2001;20:30–7.
4. Nugent AM, Steele IC, Carragher AM. Effect of thoracotomy and lung resection on exercise capacity in patients with lung cancer. Thorax 1999;54:334–8.
5. Jonathan D. Lamb MD. Anaesthesia for thoracoscopic pulmonary lobectomy. Can J Anaesth 1993;40:I073-5.
6. Abbie J Choleva, RN BSN. Anesthetic management for lobectomy in a patient with coccidioidomycosis: a case report. J Am Assoc Nurse Anesth 2010;78:321-5.